

**THIS DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND FINDING
OF NO SIGNIFICANT IMPACT FOR THE**

Conveyance Treatment for High Rolls Community Ditch, Otero County, New Mexico

IS AVAILABLE FOR PUBLIC REVIEW AND COMMENT FROM

FEBRUARY 5, 2003 THROUGH MARCH 7, 2003

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**U.S. ARMY CORPS OF ENGINEERS
ALBUQUERQUE DISTRICT**

DRAFT

**FINDING OF NO SIGNIFICANT IMPACT
AND
ENVIRONMENTAL ASSESSMENT**

**CONVEYANCE TREATMENT FOR HIGH ROLLS COMMUNITY DITCH
OTERO COUNTY, NEW MEXICO**

PREPARED BY



**US Army Corps
of Engineers®
Albuquerque District**

February 2003

**U.S. ARMY CORPS OF ENGINEERS
ALBUQUERQUE DISTRICT**

DRAFT FINDING OF NO SIGNIFICANT IMPACT

**CONVEYANCE TREATMENT FOR HIGH ROLLS ACEQUIA
OTERO COUNTY, NEW MEXICO**

The Water Resources Development Act of 1986 (Public Law 99-662), as amended, authorized the restoration and rehabilitation of irrigation ditch system (acequias) in New Mexico. Under Section 1113 of the Act, congress has found that New Mexico's acequias date from the eighteenth century and, due to their significance in the settlement and development of the western United States, should be restored and preserved for their cultural and historic values to the region. The Secretary of the Army, therefore, has been authorized and directed to undertake, without regard to economic analysis, such measure as are necessary to protect and restore New Mexico's acequias. The non-Federal financial responsibility of any work carried out under this section of the Act is 25 percent.

The High Rolls Acequia diverts water from Fresnal Creek in the community of High Rolls, Otero County, New Mexico. The town is located approximately 10 miles west of Alamogordo in the Sacramento Mountains. The open, earthen irrigation ditch is about 1.5 miles long and supplies water to 10 users and 36 acres of fruit orchards. The system was constructed in the 1880s. The original diversion structure in Fresnal Creek was replaced with a stone dam constructed in the 1930's under the Civilian Conservation Corps program.

The acequia is currently experiencing erosion, sedimentation, and flow blockages from debris falling into the ditch thereby requiring frequent maintenance to keep the water flowing smoothly and efficiently. These problems have caused water control and distribution difficulties resulting in receiving inequities to some users. Water loss occurs from seepage and evaporation. To correct these problems, an inlet structure with two gate valves would be placed in the pool just above the existing dam. The irrigation water would be transported through 7,762 feet of pipe buried immediately adjacent to the existing ditch or on a new location. Sleeves would be placed in existing culverts under roadways. Most of the existing ditch would remain intact with water periodically fed through the system to maintain ditch bank vegetation and other aesthetic qualities associated with earthen acequias. The improvements would result in a more efficient and controllable water distribution system, reduce maintenance efforts and costs, and eliminate water loss.

The planned action by the U.S. Army Corps of Engineers is a cooperative effort with the State Engineers Office of the State of New Mexico, the Natural Resources Conservation Service (NRCS), and the High Rolls Ditch Association. The State of New Mexico is the project sponsor and the project will utilize a NRCS design.

Two alternatives were considered: 1) No Action; and 2) the planned action to install and bury plastic pipe primarily outside the old ditch on a modified alignment. The No Action alternative would not meet the purpose and need for the project. The No Action and the planned action would have no significant environmental affects. Therefore, the planned action was determined to be the best alternative as it satisfied the purpose and need to improve the efficiency of irrigation water transport and distribution throughout the acequia while preserving the integrity of the existing ditch.

Section 404 of the Clean Water Act provides for the protection of waters and wetlands from impacts associated with discharges of dredged or fill material into waters of the United States. Certain discharges associated with the construction and maintenance of irrigation ditches are exempt from Section

404 permit requirements (33 CFR 323.4(a), Exemption No. 3). Therefore, no Section 404 permit is required for the planned action.

Executive Order 11988 (Floodplain Management) provides Federal guidance for activities within the floodplains of inland and coastal waters. The proposed activities would not adversely affect creek hydrology, existing flow patterns, or cause increases in the extent or duration of flood events. No additional development of the floodplain is likely to result from this project. Therefore, the proposed action complies with this executive order.

There are no wetlands in the project area and none that would be affected by the work. Since no adverse impacts would occur to wetlands, the project complies with Executive Order 11990, Protection of Wetlands.

The planned action has been fully coordinated with federal and state agencies with jurisdiction over the biological and cultural resources of the project area. As a result of the Environmental Assessment and the coordination with these agencies, I have determined that the planned action to rehabilitate the High Rolls Acequia would have no significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared for this project.

DATE

Dana R. Hurst
Lieutenant Colonel, EN
District Engineer

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**U.S. ARMY CORPS OF ENGINEERS
ALBUQUERQUE DISTRICT**

DRAFT ENVIRONMENTAL ASSESSMENT

**CONVEYANCE TREATMENT FOR HIGH ROLLS COMMUNITY DITCH
OTERO COUNTY, NEW MEXICO**

February 2003

1.0 INTRODUCTION

1.1 BACKGROUND

The High Rolls Community Ditch supplies irrigation water from Fresno Creek to users within the community of High Rolls, Otero County, in the foothills of the Sacramento Mountains of southeastern New Mexico (Figure 1). High Rolls is located on U.S. Highway 82 about 9 miles west of Alamogordo in the southeastern quadrant of New Mexico. There are 10 water users on the ditch that irrigates 36 acres of cherry, apple, and apricot orchards. The ditch also supplies water for a small pond.

The earthen, open ditch was originally constructed in the 1880's. The irrigation water is diverted from Fresno Creek by a head-gate on the north side of the creek that has been placed into an old Civilian Conservation Corps (CCC) dam constructed in the 1930s (see Figure 2). This dam replaced the original diversion structure. During the three-month irrigation season (April 15-July 15), the association can divert all of the flow from the creek during a 24-hour period. For the remaining nine months of the year, the association can divert all of the creek flow for 12 hours each day. The amount of flow available varies due to natural conditions and because the City of Alamogordo exercises an upstream water right for municipal use.

From the diversion structure the ditch flows 275 feet west and through a culvert under Karr Canyon Road, north for 150 feet and through a culvert under Highway 82, west again for 225 feet and through a culvert under Forest Road where it continues north and adjacent to Forest Road for approximately 2000 feet. At Railroad Drive, the ditch turns west and parallels this road for about 1000 feet. At this point it forks into north and south branches. The south branch parallels Cherry Way for 1000 feet where it ends at the river return flush valve after crossing under the road. The north fork crosses under Cottage Row and then travels north through private property for about 3,500 feet before terminating at the Lions Club.

The Water Resources Development Act of 1986 (Public Law 99-662) authorized the restoration and rehabilitation of irrigation ditch systems (acequias) in New Mexico. Under Section 1113 of the Act, Congress has found that New Mexico's acequias date from the eighteenth century and, due to their significance in the settlement and development of the western United States, should be restored and preserved for their cultural and historic values to the region. The Secretary of the Army, therefore, has been authorized and directed to undertake, without regard to economic analysis, such measures as are necessary to protect and restore New Mexico's acequias. The proposed improvements to the High Rolls ditch satisfy the intent and purpose of this legislation. The non-Federal financial responsibility of any work carried out under this section of the Act is 25 percent.

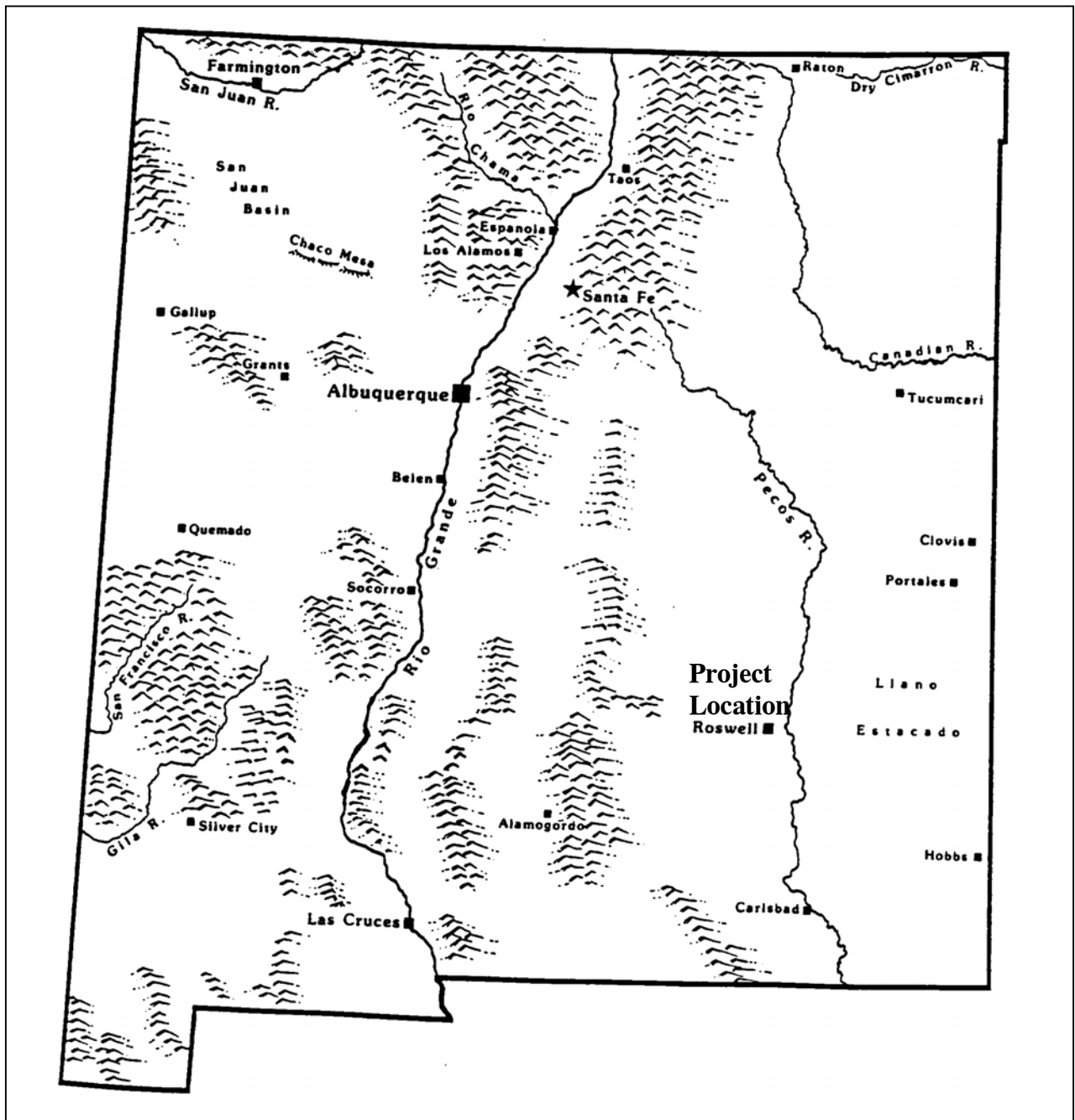


Figure 1: Location Map: Conveyance Treatment of High Rolls Community Ditch at High Rolls, Otero County, New Mexico.

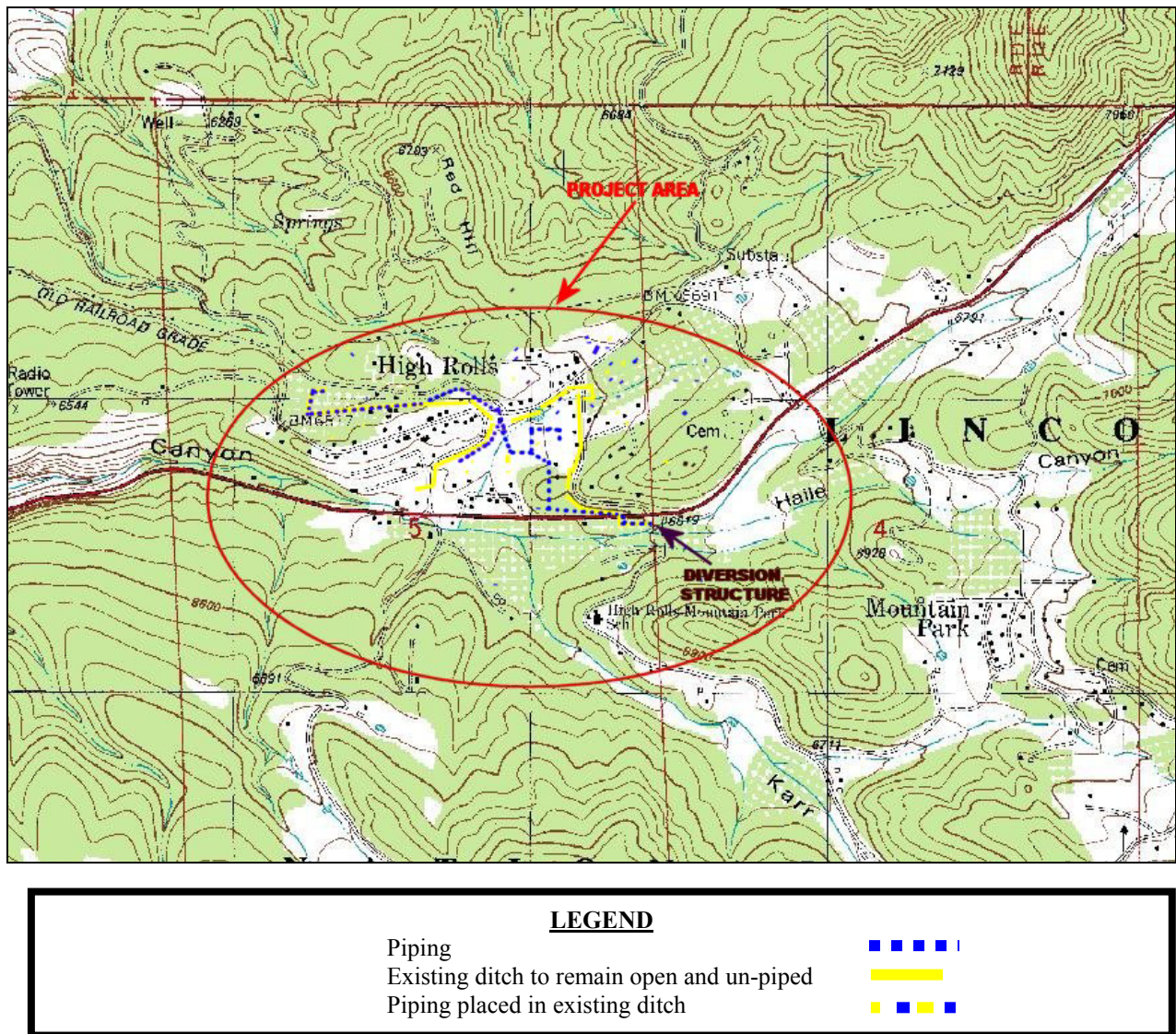


Figure 2: Project Site Location – Conveyance Treatment for High Rolls Community Ditch, Otero County, New Mexico, adapted from USGS 7.5 Minute Quadrangle Map; High Rolls, New Mexico (32105-H7; 1982), Not to Scale.

The U.S. Army Corps of Engineers (USACE) is providing funding and is therefore the action agency for this project. Project design and inspection is allocated to the Natural Resource Conservation Service (NRCS). The State of New Mexico is the project sponsor. The Albuquerque District of USACE will have authority for review and approval of aspects of the project plans and specifications insofar as they could adversely affect the environment. Under the process developed between the Albuquerque District, the State and NRCS for Section 215 acequia rehabilitation projects, the acequia association would, through a competitive bidding process, select a contractor and administer the construction contract. An engineering representative (Project Engineer) from NRCS would periodically inspect the project during construction to insure compliance with all plans and specifications, including those written for environmental protection. At the conclusion of construction, if the project passes a final inspection by the NRCS Project Engineer, funds would be made available from the State and the Albuquerque District to pay the contractor.

1.2 PURPOSE AND NEED

The High Rolls water association is experiencing problems with ditch maintenance and water delivery. Annual maintenance of the ditch is necessary due to erosion and/or side-sloughing of the ditch bank and to remove flow blockages caused by debris and sediment. The open ditch loses water from seepage and/or evaporation. Over time, these problems have reduced the flow carrying capacity of the ditch. Water control and distribution difficulties have caused delivery problems and inequities to some users, especially those at the lower end of the ditch. As a solution to these problems, the association is proposing to transport the irrigation water in buried plastic pipe. At the present time, the acequia is estimated to carry less than 1000 gpm. In the past, the ditch was deeper and did not have the culvert restrictions it has today. The new headgate and the piping system can efficiently transport up to 2000 gpm, a capacity that is greater than estimated normal flow in the creek.

1.3 HISTORY

As originally designed by the National Resources Conservation Service and approved by the New Mexico State Engineer's Office, rehabilitation of the High Rolls acequia included replacing approximately 7,880 feet of earthen ditch with buried plastic pipe to transport the water from the system's diversion structure on Fresno Creek to its end points on Cherry Way and Railroad Drive. An inlet structure with two gate valves would have been located above the existing dam. The intake box with trash rack would have been installed in the pool above the weir. A cofferdam would be constructed to dry the area for excavation of accumulated sediments and placement of the box at a level 6 inches below the top of the weir. A gated sluice pipe would discharge flush water below the dam.

With two exceptions, the pipe would have been placed and buried in the existing ditch generally running parallel to local roads. Along Railroad Drive, the ditch would have been abandoned and the easement moved slightly north to bury approximately 900 feet of pipe in the shoulder of this road. The abandoned ditch was to be backfilled. Also, because of maintenance access problems associated with the existing location of the north branch through private property between Cottage Way and Railroad Drive, 1630 feet of the existing ditch would have been abandoned and the pipe installed in the road shoulder of Railroad Drive. The pipe would then turn west for 120 feet to follow the existing ditch alignment. The original design also included the installation of twelve (12) 10-inch sprinkler valves and two 12-inch inline valves at various locations on the system for better water control and distribution. The pipe would have been placed in sleeves through existing road culverts.

Numerous High Rolls property owners objected to the potential loss of vegetation dependant on seepage water from the ditch as result of enclosing the irrigation water in pipe. They stated that piping would adversely affect vegetation adjacent to the ditch by removing water that the plants depend upon for their survival. In addition, they felt that backfilling the abandoned ditch along Railroad Drive would eliminate flood control benefits attributed to the open ditch. In response to these concerns and other unresolved issues, a public meeting was held on September 30, 2000 at the High Rolls Fire Station.

Acknowledging the non-user property owners concerns, the High Rolls Community Ditch Association agreed to the following project modifications: To provide seepage water to adjacent vegetation, the ditch in front of the properties on Forest Road would have been left open. A dog-leg diversion would route the piping west from Forest Road and then north to rejoin the ditch easement on Railroad Drive just below the old firehouse. In a written statement approved by the users and the property owners, the users agreed "to maintain a flow of water of not less than one hour a week in the existing ditch along Old Firehouse Road (Forest Road) and Cottage Row (Railroad Drive) between the Rukla and the Marshall home sites. This flow would be expressed via a flush valve in the pipeline between April 15 and July 15 of each year, historically the scheduled watering season for ditch users. Water will be routed through this ditch over the other nine months of the year to maintain the flora and

fauna immediately adjacent to this portion of the ditch. In return, High Rolls Community Ditch users will not be responsible for the maintenance of this portion of the ditch, or any and all associated damage and liability.” Additionally, approximately 800 feet of abandoned ditch along Railroad Drive would not have been filled in order to preserve the flood control benefits the open ditch allegedly provided to some property owners. All other features of the original design as described above were to be retained.

By letter dated October 31, 2001, the Corps circulated a Draft Environmental Assessment and Finding of No Significant Impact of the revised design. While the revisions satisfied most of the concerns of property owners, difficulties in obtaining a property right-of-way for the re-routed (dog-leg) pipe section resulted in abandoning this plan.

1.4 REGULATORY COMPLIANCE

This Environmental Assessment (EA) was prepared by the Albuquerque District in compliance with all applicable Federal statutes, regulations, and Executive Orders, including, but not limited to:

National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.);
Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 et seq.);
Clean Air Act, as amended (42 U.S.C. 7609 et seq.);
Clean Water Act of 1972, as amended (33 U.S.C. 1251 et seq.);
Endangered Species Act, as amended (16 U.S.C. 1531 et seq.);
Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.);
Farmland Protection Policy Act (P.L. 97-90);
Floodplain Management (Executive Order 11988);
Protection of Wetlands (Executive Order 11990);
National Historic Preservation Act, as amended (16 U.S.C. 470a et seq.);
Protection of Historic and Cultural Properties (36 CFR 800 et seq.);
Protection and Enhancement of the Cultural Environment (Executive Order 11593).
Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.)
Archeological Resources Protection Act of 1979 (16 U.S.C. 470)

This EA also reflects compliance with applicable State of New Mexico regulations and standards for water and air quality, as well as regulations conserving endangered plants and animals.

2.0 ALTERNATIVES ANALYSIS AND PROPOSED ACTION

2.1 ALTERNATIVES

2.1.1 No Action. Under this alternative, no work would be accomplished to address the ditch problems that have been identified by the acequia association.

2.1.2 The Recommended Plan

As with the prior proposed project described in paragraph 1.3 above, an intake box with trash rack would be installed in the pool above the weir. A cofferdam would be constructed to dry the area for excavation of accumulated sediments and placement of the box at a level 6 inches below the top of the weir. A gated sluice pipe would discharge flush water below the dam. Sleeving would be placed through existing road culverts. Water control valves would be installed where necessary. This design would bury 7,762 feet of 12 or 15-inch polyvinylchloride (PVC) acequia irrigation pipe (as needed) in the following manner (see Figure 2) in three construction phases: 1). In Phase I of construction, 530 feet of pipe would be installed and buried in the existing ditch from the diversion structure to the west side of Forest Road at

its intersection with New Mexico Highway 82. A 12-inch gated outlet would be installed at the end of this section of pipe. At this location, water would be periodically discharged into the old ditch in accordance with the agreement between the ditch association and non-user property owners. 2) In Phase II, 3,067 feet of pipe would be buried on a new location within the area bounded by Highway 82, Forest Road 162, Railroad Drive, and Cherry Way. 3) Phase III construction would begin at the intersection of Cottage Row and Railroad Drive. 665 feet of pipe would be buried parallel to Cottage Road and Cherry Way outside of the existing south fork of the ditch. For the north fork of the ditch (which begins at the Cottage Row/Railroad drive intersection), 1,530 feet of pipe would be buried on a new location running parallel to Railroad Drive. 730 of buried pipe on new location would then connect this section westerly to 1,140 feet of pipe that would be buried in the existing ditch to its termination point. The remaining unaltered portion of the north fork section of the existing ditch would be abandoned.

2.2 ENVIRONMENTAL PROTECTION

Rehabilitation of the irrigation system would incorporate appropriate best management practices. All construction activities would be confined to acequia association rights-of-way. All staging, including the stockpiling of construction materials and rock and equipment parking for vehicles and equipment that are not in operation, would be above the 100-year floodplain and located in the contractor's work yard within the High Rolls community area. Access to all work areas would be from existing paved and unpaved roadways. Fuel, oil, hydraulic fluids and other similar substances would be stored at the contractors yard and must have a secondary containment system to prevent spills if the primary storage container leaks. Appropriate erosion control measures would be utilized to prevent surface water drainage and erosion from the construction area and effects to surface water quality. Water dispersal equipment would be used to minimize dust during construction activities. Any rock or gravel used for rip-rap or bedding material would come from existing commercial or pre-approved upland quarries and would not contain sulfide ores or other mine waste which could release acid or heavy metals to surface waters. All waste material would be disposed properly at pre-approved or commercial disposal areas or landfills. Damage to vegetation would be avoided to the maximum extent feasible.

Areas that are disturbed throughout the entire construction corridor would be evaluated for seeding to native, indigenous vegetation, insofar as contract activities result in noticeable damage to existing ground cover. The contractor would be required to limit activities to the designated or otherwise approved areas for construction, staging access, and borrow use. The NRCS Project Engineer would coordinate with the Corps to approve any changes in access routes, borrow sites, staging areas, and other high-use areas. Approval of borrow sites and other use areas would be required regardless of their ownership or distance to the construction sites to ensure protection of vegetation, water quality, threatened and endangered species, cultural resources and other significant resources. The State of New Mexico, being the project sponsor, would be responsible for assuring operation and maintenance of the project after project completion.

The construction areas, staging areas, access routes, and any areas needed for borrow materials would be: 1) shown on the contract drawings, or 2) be approved by the NRCS Project Engineer and the commissioners of the acequia association in consultation with Corps biologists and archeologists to insure adequate protection of biological and cultural resources. Prior to the onset of construction activities, all environmental protection measures as expressed by contract clauses, contract drawings or other means would be reviewed with the contractor at the pre-construction conference.

There are no other planned actions by any other Federal, State, County or Municipal agencies for the High Rolls Community Ditch.

3.0 EXISTING ENVIRONMENT AND FORESEEABLE EFFECTS OF THE PLANNED

ACTION

3.1 PHYSIOGRAPHY, GEOLOGY AND SOILS

The project is located within the Sacramento Mountains Physiographic Province on the western edge of the Sacramento Mountains. This region is characterized by high tablelands with broad rolling summit plains; cuesta-form mountains with eastward dip-slopes and west-facing escarpments; and widely separated structural basins (Williams 1986). The High Rolls acequia is situated within Fresnel Canyon at an elevation of approximately 6500 feet (1981 m) and surrounded by terrain rising to 7500 feet (2286 m) and higher. The general area is vegetated by species of the Great Basin Conifer Woodland community dominated by juniper (*Juniperus*) and pinyon (*Pinus*).

The low detail soils map of the Otero area indicates that High Rolls lies within the Lozier-Rock outcrop complex, 0 to 5 percent slopes. This complex consists of areas of shallow, well-drained Lozier soil and limestone outcrop on narrow and broad upland plateaus of mesa tops that are bedrock controlled. Lozier gravelly loam makes up 75 percent of each mapped area. Typically, the surface area is light brownish gray and pale brown gravelly loam about 7 inches thick. The substratum is white, very gravelly silty clay loam about 8 inches thick and high in lime. Un-weathered limestone bedrock is at a depth of about 15 inches (U.S. Soil Conservation Service, 1981).

As determined necessary by the Project Engineer and the Ditch Commission, the contractor shall use Best Management Practices (BMP's), such as mulch application, straw/hay bales and silt fences to retard erosion from contractor use areas. To protect soils from wind and water erosion, areas with plant cover that are disturbed by project activities would be evaluated by the Project Engineer in consultation with the local NRCS District Conservationist as to the feasibility of re-establishing native vegetation by seeding. Areas disturbed by project activities would be seeded if the evaluation by the Project Engineer determines that seeding could significantly reduce the time for re-establishment of native vegetation. In this event, the species to be seeded, seeding rates and seeding methods, and if needed, fertilizer regimes, would be determined by site characteristics and potential ability to bind the soil.

Ditch bank erosion and infilling of the ditch with sediment are maintenance problems associated with the existing irrigation system. Under the no action alternative, sediment and maintenance problems would continue. In the absence of periodic maintenance to repair ditch banks and remove sediment in the channel the system would eventually fail. The action alternative would eliminate soil erosion and reduce maintenance by replacing the earthen ditch with plastic pipe.

3.2 CLIMATE

According to data compiled at the Mountain Park, NM climatological recording station located approximately one mile east of High Rolls, rainfall averages about 20 inches a year in the area (USDA 1999). The main source of precipitation in the summer rainy season comes from moist air originating in the Gulf of Mexico (U.S. Soil Conservation Service, 1981). The average daily maximum temperature in the warmest month is 93 degrees Fahrenheit (F), while the average daily minimum temperature in the coldest month is 28 degrees F. The average number of frost-free days (growing season) is 170 days, from early May to late October (USDA 1999). Neither alternative would have any effect on the local climate.

3.3 WATER QUALITY

The New Mexico Water Quality Control Commission (NMWQCC 1995) has defined water quality standards to be maintained in rivers and streams. These standards pertain to: stream bottom deposits; floating solids, oil and grease; color, odor and taste of fish; plant nutrients; toxic substances; radioactivity;

pathogens; temperature; turbidity; salinity; and dissolved gases. In addition, Section 3101 of the referenced document includes standards applicable to uses for wildlife habitat and livestock watering which shall not be exceeded.

In the High Rolls area Fresno Creek is a perennial stream that drains to the closed Tularosa Basin. Designated uses of this tributary include coldwater fishery, fish culture, irrigation, livestock watering, wildlife habitat, municipal and industrial water supply, and secondary contact. pH must be within the range of 6.6 to 8.8 and the monthly geometric coliform bacteria should not exceed 100/100 ml and no sample should exceed 200/100 ml.

Section 402(p) of the Clean Water Act (CWA) specifies that stormwater discharges associated with construction activities disturbing five or more acres of total land area must be authorized by a National Pollutant Discharge Elimination System (NPDES) Permit. Because less than five acres would be disturbed by the project, NPDES permit authorization would not be required. However, as discussed under Section 3.1 above, Best Management Practices (BMP's) would be used as necessary to retard erosion and prevent sedimentation wherever project construction activities occur.

Section 404 of the CWA also provides for the protection of waters and wetlands of the United States from impacts associated with irresponsible or unregulated discharges of dredged or fill material in waters of the U.S. including wetlands, as defined under Section 404 (b)(1). However, this act also states that certain discharges associated with the construction and maintenance of irrigation ditches are exempt from requiring a Section 404 permit (33 CFR 323.4(a), Exemption No. 3). Discharges associated with siphons, pump, headgates, wingwalls, weirs, diversion structures, and other facilities functionally related to irrigation ditches are also included in this exemption. Therefore, a Section 404 permit would not be required for the planned action. Because no permit for Section 404 of the CWA is required, neither is State water quality certification under Section 401. The only work directly impacting Fresno Creek would be the installation of the intake box and trash rack. To minimize turbidity during construction, a coffer dam would be built to dry the area prior to excavation of accumulated sediments and placement of the structure. Any increase in turbidities would be minor and cease upon completion of the work and removal of the coffer dam.

The existing earthen ditch system is prone to bank erosion, debris blockages, and sediment infilling. Under the no action alternative, local water quality may be adversely affected by the continued discharge of these source materials in the water returned to the creek. Implementing the planned action would create a closed water transport system thereby reducing or eliminating this impact. Piping the irrigation water would maintain and/or possibly enhance long-term water quality in Fresno Creek.

3.4 WETLANDS AND FLOODPLAINS

Executive Order 11990 (Protection of Wetlands) requires the avoidance, to the extent possible, of long- and short-term adverse impacts associated with the destruction, modification, or other disturbances of wetland habitats. There are no wetlands adjacent Fresno Creek within the construction area and, therefore, there would be no effects to wetlands from the proposed work for either alternative.

Executive Order 11988 (Floodplain Management) provides Federal guidance for activities within the floodplains of inland and coastal waters. Preservation of the natural values of floodplains is of critical importance to the nation and the State of New Mexico. Federal agencies are required "to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management." The proposed activities would not adversely affect creek hydrology, existing flow patterns, or cause increases in the extent or duration of flood events. No additional development of the floodplain is likely to result from this project. Neither alternative would adversely affect the wetlands and floodplain of Fresno Creek.

3.5 LAND AND WATER USES

The private lands irrigated by the High Rolls Community Ditch are owned by the members of the acequia association. The serviced acreage constitutes the highest value agricultural lands in the region, with the water primarily being used to irrigate fruit orchards (apple, cherry, and apricot). High Rolls lies within the Lincoln National Forest and, therefore, the surrounding land is preserved and protected in its natural state for silviculture, plant and wildlife and fisheries management, and non-consumptive recreational use by the public. The White Sands Missile Range and the White Sands National Monument are situated approximately 3.5 miles down-slope west of Alamogordo in the Tularosa Basin. The Mescalero Apache Indian Reservation's southern boundary is also the northern boundary of the Lincoln National Forest at High Rolls. Management of the reservation offers further protection to local land and water resources.

Under the no action alternative, adverse effects to the acequia would include continued inefficiencies in the delivery and distribution of irrigation water, ongoing ditch maintenance, and threat of failure of the overall system. These impacts would adversely impact land and water uses associated with orchard production. In contrast, the planned action would provide an efficient and essentially maintenance free irrigation system that would ensure adequate and reliable water for the continued productivity of the orchards. Some citizens expressed concerns with losing flood control benefits they attribute to the existing open irrigation ditch as it runs through their property. Both alternatives would address these concerns by leaving the abandoned ditch open where desired.

3.6 AIR QUALITY AND NOISE

Otero County is in attainment status for State and Federal Ambient Air Quality Standards for criteria pollutants (particulate matter less than 10 microns, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead) (NMED 1997). In the State's Prevention of Significant Deterioration (PSD) program administered by the New Mexico Environment Department, the project is located within an area designated as Class II, which allows for moderate development and its associated air emissions. The closest PSD Class I (pristine) area is the White Mountain Wilderness, which lies approximately 25 air-miles northeast of the project.

Although seasonally high winds are common, blowing dust is generally not a problem in the project area. As a result of the operation of vehicles and construction equipment, the project would produce localized and ephemeral increases in concentrations of dust and combustion emissions; however, the planned action would not result in any permanent or significant short-term degradation of air quality. The no action alternative would have no effect on air quality.

Existing noise levels at the project site are typical of undeveloped, rural areas. Some increase in ambient noise levels would be expected from construction-related activities; however, noise levels would remain below State and Federal standards for public safety and would not persist beyond completion of the planned action. The no action alternative would have no effect on noise levels in the High Rolls area.

3.7 BIOLOGICAL RESOURCES

Terrestrial Communities: The vegetative community at the project is characterized as a great basin conifer woodland as described by Brown, 1982. These areas are characterized by the unequal dominance of two conifers – juniper (*Juniperus*) and pinyon pine (*Pinus*). The understory is typically composed of grasses such as (*Bouteloua gracilis*) and shrubs such as threadleaf groundsel (*Senecio longilobus*) and snakeweed (*Gutierrezia sarothrae*). Grasses commonly found include galleta grass (*Hilaria jamesi*),

Indian ricegrass (*Oryzopsis hymenoides*), and western wheatgrass (*Agropyron smithii*). Cacti include several hedgehogs (*Echinocereus spp.*), and prickly-pears and chollas (*Opuntia spp.*).

The proposed work is primarily within residential properties or irrigated cherry orchards in the High Rolls Community. The north fork of the ditch courses through a livestock holding area vegetated only with an overstory of pinyon and junipers not dependant on ditch water seepage for survival. In general, vegetation within the project limits through uplands is a combination of native and exotic tree species growing within landscaped lawns, orchards, pastures and other livestock areas, or other altered or disturbed areas. With the existing ditch remaining open and periodically supplied with water, the ditch bank vegetation would continue to be supported by seepage water. Therefore, the proposed work would have no effect on terrestrial plant life.

Animals common in the vicinity of the project area include the pinyon mouse (*Peromyscus truei*), pinyon jay (*Gymnorhinus cyanocephalus*), gray flycatcher (*Empidonax wrightii*), bushy-tailed woodrat (*Neotoma cinerea arizonae*), gray vireo (*Vireo vicinior*), black-throated gray warbler (*Dendroica nigrescens*), and Scott's oriole (*Icterus parisorum*). Juniper-pinyon woodlands are important winter habitat for rocky mountain elk (*Cervus elaphus*) and mule deer (*Odocoileus hemionus*).

Aquatic and Riparian Communities. There is no quantitative or qualitative information available on the fishery of the creek (Medley 2000). However, the only work that would take place in Fresno Creek would be the installation of the inlet box and trash rack within the existing pool behind the dam. Substrate impacts would be minimal and temporary and involve the removal of accumulated sediments to place the structure. A cofferdam would be built to dry the area prior to excavation and installation of the box to prevent sediments and dredged material from entering the stream. The cofferdam would be removed upon completion of the work. Any increases in creek turbidity would be minimal and cease upon completion of this work. It is not anticipated that this work would adversely impact aquatic habitat.

The work would disturb approximately 1,720 (0.04 acre) square feet of riparian vegetation on Fresno Creek. The vegetation consists of an estimated 605 square feet of woods comprised of an overstory of Fremont cottonwood (*Populus deltoides* spp. *wislizenii*) and an understory dominated by prickly rose (*Rosa stellata*). Other understory plants include grape (*Vitis* spp.), reed (*Phragmites* spp.), and various native grasses. However, it is anticipated that only the understory vegetation in this area would be affected by the work. The remaining 1125 square feet of vegetation is composed primarily of an open stand of coyote willow (*Salix exigua*) that is dissected by Karr Canyon Road and its causeway just west of the woods. Hydrophytic plants scattered along the ditch in the uplands include Fremont cottonwood, water hemlock (*Cicuta* spp.), *Juncus* spp., bulrush (*Scirpus* spp.), and rush (*Equisetum* spp.). Because of the ditch's close proximity to the creek, it is not anticipated that significant soil moisture within the work corridor would be removed by installing the irrigation pipe. Therefore, the reestablishment and survival of hydrophytic vegetation should not be adversely impacted. Woody plants (e.g. coyote willows, prickly rose) will be cut only to or above the soil surface. This would facilitate natural revegetation, especially for rhizomatous species such as the coyote willow. To protect the creek from erosion runoff, all excavated soil would be stockpiled on the north side of the ditch. Backfilling the ditch along the creek would create an estimated 800 square feet of soil suitable for the establishment of riparian vegetation. The backfilled area would be stabilized and seeded with native plants.

The project would take place in late fall or winter, which is typically outside the period when terrestrial vertebrates breed and the young mature. All disturbed areas would be stabilized by appropriate erosion control measures and reseeded with native vegetation as stated in the work contract.

With the exception of the Fresno Creek riparian area as described previously, and the north fork of the irrigation system along Railroad Road, the planned work would leave most of the existing ditch open and supplied with water to sustain bank vegetation. The no action alternative would also leave the ditch

open. Neither alternative would significantly adversely affect the terrestrial or aquatic biotic communities within the work corridor.

3.8 THREATENED AND ENDANGERED SPECIES

The three agencies who have primary responsibility for the conservation of animal and plant species in New Mexico are the U.S. Fish and Wildlife Service (Service), under authority of the Endangered Species Act of 1973 (as amended); the New Mexico Department of Game and Fish (NMDGF), under the authority of the Wildlife Conservation Act of 1974; and the New Mexico Energy, Minerals and Natural Resources Department, under authority of the New Mexico Endangered Plant Species Act and Rule No. NMFRCD 91-1. Each agency maintains a list of animal and/or plant species that have been classified or are candidates for classification as endangered or threatened based on present status and potential threat to future survival or recruitment. Of these species, those with potential to occur in or near the project area are given in Table 1.

Table 1. Species listed by the Service and the State of New Mexico as threatened, endangered or candidates that may occur in or near the project area for the proposed rehabilitation of the High Rolls Community Ditch.

Species	Federal Status*	State Status*
Sacramento prickly poppy (<i>Argemone pleiacantha ssp. pinnatisecta</i>)	E	E
Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>)	E	E

*

E -- Endangered.

T – Threatened

C - Candidate

The Sacramento prickly poppy (poppy) is found in Otero County, New Mexico in 10 canyons on the western slope of the Sacramento Mountains from Fresnal Canyon on the north to Escondido Canyon on the south. The plant prefers loose, gravelly soils of open disturbed sites in canyon bottoms and slopes, and sometimes along roadsides. Although highway maintenance or other construction disturbances may destroy some plants, such activities may create suitable habitat. On August 27, 2002, Marron and Associates, Inc. surveyed the project corridor for endangered plant species. It was determined that most of the habitat within the project limits was too heavily overgrown and unsuitable for the poppy. Potential habitat was present and identified but no viable plants or any indication of its past presence was found. (See Marron report in Appendix C). Therefore, the project would have no effect on the Sacramento prickly poppy.

Although the project lies in the historic range of the Southwestern Willow Flycatcher, there is no suitable habitat for breeding or nesting in the vicinity of the project. Suitable habitat consists of dense, tall stands of shrubs, such as coyote willow, seep willow, Russian olive, or even salt cedar, in the immediate vicinity of surface water or saturated soil, ideally with a scattered overstory of cottonwoods or other large trees. Use of the vegetative habitat within the project area by the Flycatcher as anything but as an occasional stop during migration is unlikely. Therefore the project would have no effect on the southwestern willow flycatcher.

In consideration of the this information, there would be no effects to threatened or endangered species or their critical habitat from either alternative.

3.9 CULTURAL RESOURCES

The history of the region may be divided into six major periods (Laumbach and Kirkpatrick 1985; Wimberly and Rogers 1977); Paleoindian (ca. 12,000-7,000 BP), Archaic (ca. 7,000 BP-AD300), Formative (Jornada Mogollon, ca. AD 300-1400), Apachean (ca. AD 15-1600[?] -1870), Anglo/Hispanic (ca. AD 1870-1945), U.S. Military (AD 1945-present). Archaic and Formative Period sites represent prehistoric utilization of the area. Ethnographic and archival information indicate that the area was a stronghold of the Mescalero Apache until the establishment of the Mescalero reservation in 1873 (Wimberly and Rogers 1977). Anglo/Hispanic occupation of the area expanded rapidly during the last decades of the 19th century. Occupation during the early decades of the 20th century was characterized by the concentration of ranching into the hands of fewer owners. The generalized economic decline of the Great Depression during the 1930's resulted in a significant amount of depopulation in the region during that time. The establishment of White Sands Proving Ground, Holloman AFB, and other military facilities around the end of World War II provided the basis for the region's subsequent economic growth. The development of recreational facilities at nearby Cloudcroft and on the Mescalero Reservation has made tourism a large part of the local economy over the past few decades.

Three archaeological sites are known to occur in the project area. The prehistoric LA33222 site, a Mogollon Puebloan Period lithic and ceramic scatter, would not be affected by project construction. LA115522 is an old railroad grade, a segment of the historic Alamogordo & Sacramento Railroad that has been significantly altered and is now used as a community street (Revitte 1996). A portion of the Community Ditch's underground pipeline will be buried along the west side of Railroad Drive (LA115522) and will cross Railroad Drive in one location. Revitte (1996) considered this segment of the old railroad grade to have lost its integrity due to the significant alteration of the railroad grade. The proposed construction would not significantly affect the old railroad grade. LA115523 is the High Rolls Community Ditch itself, as reported by Revitte (1996).

Two acequia rehabilitation projects have been previously proposed for the High Rolls Community Ditch. The initial National Historic Preservation Act consultation, conducted by the Natural Resources Conservation Service (NRCS) in 1997, determined that the High Rolls Community Ditch is eligible for the National Register of Historic Places under criteria *a* and *d* (Revitte 1996). Furthermore, NRCS found that piping of the ditch would not affect those elements of the irrigation system that qualify it for inclusion on the National Register. The New Mexico State Historic Preservation Officer (SHPO) concurred with both of these determinations. In 2000, the Corps consulted with the SHPO regarding the second proposed rehabilitation project (Kneebone 2000). That project included an alignment change for an underground pipeline and abandonment of a portion of the historic earthen ditch. The cultural survey of the new alignment found no historic sites or features and those isolated objects found do not appear to have necessary context or integrity to qualify them for National Register eligibility. The SHPO concurred with the Corps' determination of no adverse effect. Neither of these projects was constructed.

The current project is the third proposal for rehabilitation of the High Rolls Community Ditch and includes another alignment change for underground pipeline. In December 2002, a Corps' archaeologist surveyed the new pipeline alignment and no artifacts, cultural resource manifestations, archaeological sites or historic properties were observed along the new construction alignment. While two segments of the earthen ditch will be piped and one segment will be abandoned due to flooding and seepage problems, a significant segment of the historic earthen ditch will remain in use. An agreement between the Community Ditch Association and other community residents living along the historic acequia allows for a schedule whereby irrigation water would be alternated between the pipeline and the open earthen ditch in order to maintain existing vegetation thereby maintaining the historic aesthetic qualities of the open-ditched acequia.

The Corps concurs with NRCS and the SHPO that the High Rolls Community Ditch is eligible for

inclusion on the National Register and is of the opinion that the current project will not significantly affect visual or aesthetic qualities that contribute to the system's eligibility. The current project would increase the efficiency of the acequia system and reduce water loss and maintenance costs, contributing to the continued use of the system. The NRCS and the Corps have consulted with the SHPO and provided cultural resources and survey information and numerous photographs of the acequia system (Revitte 1996, Kneebone 2000, Everhart 2003; Appendix B). Should any previously undiscovered cultural resources be encountered during any construction operation, construction will cease in the immediate vicinity of the resource until its significance and disposition have been evaluated, in consultation with the New Mexico State Historic Preservation Officer and with any Native American groups that may have interest or concerns in the project area pursuant to 36 CFR 800.11.

3.10 SOCIO-ECONOMIC ENVIRONMENT

The majority of gainfully employed individuals living in Otero County work in the agricultural industry through ranching or farming, providing goods and services to those so engaged, or work in Alamogordo or Holloman Air Force Base. The county had an estimated population of 54,630 in 1998, down 1.5% from 1997 (U.S. Census Bureau, 1999). Approximately 50% of these people resided in the City of Alamogordo. The unemployment rate in the county is 8.3%, compared with 7.5% for the state of New Mexico (Boatman's Sunwest, Inc., 1994). The production of alfalfa and other hay crops, livestock rearing and subsistence farming are the main agricultural enterprises in the county, much of which depends on irrigation. The primary benefits of the planned action on the local socioeconomic environment will accrue to the users of the High Rolls Community Ditch Association, those with whom they trade, and persons employed in orchard harvesting.

The planned action would preserve and enhance the socio-economic environment of the area by providing an efficient irrigation system to support the agricultural economy of High Rolls. Under the no action alternative, the existing acequia would continue to be inefficient, require high maintenance, and face the ongoing threat of failure and abandonment to the detriment of local economics.

3.11 ENVIRONMENTAL JUSTICE

Executive Order 12898 (Environmental Justice) requires "to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the national Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations..." The proposed improvements to the High Rolls ditch would be of benefit to all users of the system regardless of race or income. The work would not disrupt or displace any residential or commercial structures. The proposed project has been reviewed for compliance with this order and it has been determined that the no-action and the planned action would not adversely affect the health or environment of minority or low-income residents.

3.12 RECREATIONAL AND AESTHETIC QUALITIES

There are many recreational opportunities for the general public in the area surrounding High Rolls. They include hiking, camping, fishing, road touring, and bike riding in the Lincoln National Forest, snow skiing at Cloudcroft and within a short distance north near Ruidoso in the Mescalero Indian Reservation, and site seeing associated with the White Sands National Monument, Smokey Bear National Park, and military missile range. These activities are all at or within short driving distances of the project. Neither alternative would significantly affect the recreational and aesthetic qualities of the region.

3.13 CUMULATIVE EFFECTS OF THE PROJECT

In consideration of past, present and future (foreseeable, reasonable actions), neither alternative would adversely affect the resources of the construction area. The no action alternative would not affect any local resources. No other foreseeable actions by Federal, State or local officials are anticipated in the vicinity of the planned action. Therefore, the planned action would not, when combined with any additional, foreseeable projects, raise effects to any environmental or cultural resources to a significant level.

4.0 CONCLUSIONS

Alternative 1, the No Action alternative, was rejected because the present irrigation system is in need of improvement and preservation. This alternative would not meet the purpose and need of the project, protect the socio-economic well being of the community, or restore and preserve the cultural and historic values of this acequia to the region as intended under Section 1113 of the Water Resources Development Act (WRDA) of 1986.

The Planned Action is a modified project design that addresses the concerns of some property owners by leaving most of the existing ditch open and periodically supplied with water while enclosing all of the irrigation water in plastic pipe. This alternative would result in insignificant environmental impacts, resolve objections to the planned work, meet the purpose and need for the project, and satisfy the intent of Section 1113 of the WRDA.

This Federal action by the Corps is authorized by law written for the restoration and rehabilitation of acequia systems in New Mexico. The rehabilitation of the acequia would provide a system that requires less maintenance, provide for efficient and equitable distribution of the water to its users, eliminate unacceptable water loss, and insure maximum possible conveyance of water over the next several decades. This project should not result in any significant impacts to the natural or human environments of the region.

5.0 PREPARATION, CONSULTATION AND COORDINATION

5.1 PREPARATION

Gary Lopez, Project Manager
Ernest Jahnke, Biologist
Gregory Everhart, Archaeologist
William van Pelt, NRCS, Project and Design Engineer

5.2 CONSULTATION AND COORDINATION

Agencies and entities contacted formally or informally in preparation of this Environmental Assessment include:

Concerned Citizens of the High Rolls Community
High Rolls Acequia Association
Mescalero Apache Tribe
Natural Resource Conservation Service
New Mexico State Historic Preservation Office
New Mexico Department of Game and Fish
New Mexico Environment Department

New Mexico Department of Energy,
Minerals, and Natural Resources
New Mexico Department of Highways
and Transportation
New Mexico State Engineer Office
U.S. Fish and Wildlife Service

Consultation correspondence with the State Historic Preservation Office is included in Appendix A. The Biological Coordination correspondence is included in Appendix B. Appendix C contains the endangered species survey of the Sacramento Prickly Poppy.

A legal notice requesting comments on this Draft Environmental Assessment and Draft Finding of No Significant Impact (DEA/FONSI) for the proposed project will be published at the beginning of the public review period in Spanish and English in the Alamogordo Daily Times, Alamogordo, New Mexico. Simultaneously, an electronic copy of these documents will be posted on the Albuquerque District Corps of Engineers website at <http://www.spa.usace.army.mil>. from February 5 through March 7, 2003

6.0 LITERATURE CITED

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APPENDIX A
CULTURAL RESOURCES COORDINATION

APPENDIX B

BIOLOGICAL COORDINATION AND RESPONSES TO COMMENTS

APPENDIX C

THREATENED AND ENDANGERED SPECIES SURVEY



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October 1, 2002

Ernie Jahnke
USACE
4101 Jefferson Plaza NE
Albuquerque, NM 87109

**Re: Endangered Species Survey for the High Rolls Irrigation Improvement
Project at High Rolls, Otero County, New Mexico on August 27, 2002**

Dear Mr. Jahnke:

On August 27, 2002, Marron and Associates, Inc. conducted an endangered species survey of the acequia system along US 82, Cherry Way, Railroad Drive, and Forest Road Number 162 at High Rolls, New Mexico. The proposed action at this site will be to insert piping into the existing irrigation system. The survey was conducted in order to determine if Sacramento Prickly Poppy (*Argemone pleiakantha* ssp. *pinnatisecta*) plants occur within or adjacent to the proposed project area.

The habitat surrounding High Rolls consists principally of piñon-juniper woodland, which generally had been modified to rural residential conditions now dominated by orchards and dwellings. The area immediately adjacent to the existing ditch supported a narrow riparian zone often dominated by phreatophic trees such as Rio Grande cottonwood (*Populus deltoides* ssp. *wislizenii*) intermixed with mesic shrubs such as coyote willow (*Salix exigua*) and Wood's rose (*Rosa woodsii*). Weedy species such as Siberian elm (*Ulmus pumila*) and teasel (*Dipsacus fullonum*), and escaped cultivars such as black raspberry (*Rubus occidentalis*) were also common. A large number of planted and exotic ornamentals occur in the area. The majority of the non-cultivated part of the project corridor was dominated by non-riparian species such as alligator juniper (*Juniperus deppeana*), several scrub oaks (*Quercus* spp.), and mountain mahogany (*Cercocarpus montanus*). Also included were grasses such as side-oats and blue grama (*Bouteloua curtipendula* and *B. gracilis*) and little bluestem (*Schizachyrium scoparium*), and forbs such as chocolate flower (*Berlandiera lyrata*), desert four-oclock (*Mirabilis multiflora*), and mallow (*Spaeralcea* spp.).

Prior to the onset of the survey, several known populations sites of *Argemone pleiakantha* ssp. *pinnatisecta* were examined along US 82, just west of High Rolls. These sites were visited to determine the condition of the *Argemone pleiakantha* ssp. *pinnatisecta* plants. In all cases the known plants in the vicinity of High Rolls were green and exhibited robust growth. Plants were in flower, all were highly visible and identifiable, and many were over 0.5 meter in height.


The survey of the High Rolls acequia system began at approximately 10:00 am on August 27, 2002. The conditions were excellent with bright sunshine. The field crew, from Marron and Associates, Inc., was guided through the study area by Ms. Rebecca Davis (who owns the majority of the property that will contain this portion of High Rolls irrigation improvement project).

Most of the habitat within the proposed project limits was heavily overgrown and not suitable for *Argemone pleiacantha* ssp. *pinnatisecta*. US 82, the eastern portion of Forest Road Number 162, and small isolated pockets within the project corridor could be considered potential but marginal habitat for *Argemone pleiacantha* ssp. *pinnatisecta* (i.e. road edges, barren fields, and pastures). No *Argemone pleiacantha* ssp. *pinnatisecta* was present, nor was there any indication of past presence (old or dead plants) of the species within or near the proposed project area during the survey. No *Argemone pleiacantha* ssp. *pinnatisecta* habitat will be removed as a result of this project. Temporary habitat disturbance will occur, but it will not occur in currently occupied habitat.

Based upon the proposed project action, it is not anticipated that this project will have any effect upon *Argemone pleiacantha* ssp. *pinnatisecta*. Should you have any questions or need additional information, please do not hesitate to contact myself or Paul Knight at (505) 898-8848.

Thank you.

Sincerely,

A handwritten signature in black ink that reads "Nancy Kastning". The signature is fluid and cursive, with the first name "Nancy" and last name "Kastning" clearly distinguishable.

Nancy Kastning
Marron and Associates, Inc.

